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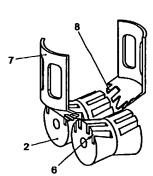
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(54) Title: APPARATUS FOR CONVEYING OBJECTS



(57) Abstract: Apparatus for conveying objects (1), for instance fruits, comprising - a first endless conveyor, with conveying elements (2) such as diabolos connected thereto, while a conveying position is defined between at least two conveying elements, one of which downstream and the other upstream, viewed in the direction of travel of the conveyor, and - a second endless conveyor, with product carriers connected thereto, comprising gripper hands (7), for transferring objects from between the conveying elements, the second conveyor being provided in the direct proximity of the first conveyor, wherein at least in the surfaces supporting the objects at the moment of transfer, the conveying elements comprise grooves (4) in a direction perpendicular to the conveyor, and said gripper hand has fingers (8), while the distance between the fingers corresponds to the distance between the grooves of the conveying elements such that upon transfer of the objects by said gripper hand the fingers are positioned at least partly under the objects in the groove ends (6) of the grooves.

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A. CLASSI IPC 7	FICATION OF SUBJECT MATTER B65647/90 B65617/32									
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B. FIELDS	SEARCHED									
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Electronic d	alia base consulted during the international search (name of data bas	e and, where practical	, search terms used)							
EPO-Internal										
C. DOCUMENTS CONSIDERED TO BE RELEVANT										
Category *	Citation of document, with indication: where appropriate, of the res	Relevant k	o claim No.							
A	EP 0 687 508 A (TAS ADRIANUS WILH 20 December 1995 (1995-12-20) cited in the application the whole document	1-8								
A	US 6 234 300 B1 (VAN ARKEL JAN MA AL) 22 May 2001 (2001-05-22) column 2, line 14 - line 67; figu	1-8								
А	US 4 411 366 A (DE GREEF JAN A) 25 October 1983 (1983-10-25) column 4, line 60 - column 5, lin figures 1-10	1-8								
Further documents are listed in the continuation of box C. Patent family members are listed in annex.										
A cocument of particular relevance or me an which is not considered to be of particular relevance.  "E" earlier document but published on or after the international filing date "X" document of particular relevance; the cannot be considered novel or cannot be considered novel			I not in conflict with the application be d the principle or theory underlying the uter relevance; the ctaimed invention red novel or carnot be considered to re step when the document is taken a uter relevance; the ctaimed invention ned to involve an inventive step when inhed with one or more other such do ination being obvious to a person skill of the same patent family	the application but seem underlying the claimed invention to be considered to comment is taken alone claimed invention mentive step when the one other such docu-us to a person skilled						
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Name and r	mailing address of the ISA  European Patent Office, P.B. 5818 Patentlaan 2  NL - 2280 HV Rijswijk  Tel. (+31-70) 340-2040, Tx. 31 661 epo ni, Fac: (+31-70) 340-3016	Authorized officer Sundqv1	Authorized officer Sundqv1st, S							

### INTERNATIONAL SEARCH REPORT

Information on patent family members

Application No PCT/NL2004/000580

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
EP 0687508	Α	20-12-1995	JP	9165011 A	24-06-1997
			NL	9400969 A	02-01-1996
			EΡ	0687508 A1	20-12-1995
			US	5703332 A	30-12-1997
			ZA	9504926 A	15-02-1996
			DE	69519601 Di	18-01-2001
			DE	69519601 T2	21-06-2001
			ES	2155109 T3	01-05-2001
US 6234300	B1	22-05-2001	NL	1003057 C2	10-11-1997
			DE	69716139 D1	07-11-2002
			DE	69716139 T2	16-10-2003
			EP	1009695 A1	21-06-2000
			ES	2180973 T3	16-02-2003
			WO	9742112 A1	13-11-1997
US 4411366	Α	25-10-1983	NL	8001900 A	02-11-1981
		•	DĖ	3165330 D1	13-09-1984
			EP	0037142 A1	07-10-1981
			ES	8201855 A1	01-04-1982